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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,295	03/03/2004	Yoshinobu Suehiro	PTGF-03109	3532
21254	7590	01/31/2006	EXAMINER	
MCGINN INTELLECTUAL PROPERTY LAW GROUP, PLLC 8321 OLD COURTHOUSE ROAD SUITE 200 VIENNA, VA 22182-3817			ARENA, ANDREW OWENS	
			ART UNIT	PAPER NUMBER
			2811	

DATE MAILED: 01/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/791,295	SUEHIRO ET AL.	
	Examiner	Art Unit	
	Andrew O. Arena	2811	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 November 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 12-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                    |                                                                             |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____                                                |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>07/08/2004</u> .                                                          | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of Group I (claims 1-11) in the reply filed on 11/23/2005 is acknowledged.

### ***Claim Objections***

2. Claim 4 is objected to because of the following informalities: The numeral 4 denoting the claim is unclear. Appropriate correction is required.
3. Claim 7 is objected to because of the following informalities: the recitation "positioning the light-transmitting portion to the electrode" on lines 13-14 is incorrect grammar. An appropriate correction is "positioning the light-transmitting portion adjacent to the electrode". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2, and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Juestel et al. (JP Pub 2002-223008) – hereinafter Juestel.

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6. A machine translation from the JPO website of the Juestel reference is included with this office action and referred to for rejection purposes.

7. Regarding claim 1, Juestel discloses (Drawing 1) a light emitting apparatus (1), comprising:

a semiconductor light emitting element (3) that emits light with a predetermined wavelength ([0027] In 5);

a light-transmitting portion (6; [0024] In 1-3) that includes a recess (at 2) to house the semiconductor light emitting element (3), the light-transmitting portion being of a light-transmitting material ([0024] In 1-3); and

a phosphor layer portion (4; [0024] In 5) that is thinly formed along the surface of the recess, the phosphor portion including a phosphor to be excited by irradiating light emitted from the semiconductor light emitting element (inherent in fluorescent substance, [0024] In 5).

8. Further regarding claim 1, the product-by-process limitation "the light-transmitting portion being formed by molding the light-transmitting material" has not been given patentable weight. The case law establishing this precedent follows:

"Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

9. Regarding claim 2, Juestel discloses (Drawing 1) the light-transmitting portion has a light convergence shape to converge light (inherent in the convex lens shape 6) emitted from the light emitting element ([0024] In 1-3).

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10. Regarding claim 4, Juestel discloses (Drawing 1) the recess is located close to the semiconductor light emitting element along the profile of the semiconductor light emitting element (apparent in Drawing 1).

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 3, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Juestel as applied to claim 1 above, and further in view of Roberts et al. (US 6,335,548) – hereinafter Roberts.

13. Regarding claim 3, Juestel discloses the semiconductor light emitting element is an LED element (abstract ln 1-2) that emits light from its light emission surface located on the opposite side of its mounting surface (an LED inherently emits light from all surfaces). Juestel differs from the claimed invention only in not expressly disclosing “a flip-chip type LED.” Roberts teaches the use of a flip-chip type LED (col 20 ln 15-37). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to make the LED of Juestel a flip-chip type LED, as taught by Roberts; at least to extend operation (Roberts col 20 ln 33-37).

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14. Regarding claim 5, Juestel differs from the claimed invention only in not disclosing “a plurality of LED elements disposed in a predetermined arrangement.”

Roberts teaches (Fig 19) this limitation (col 29 ln 64-65). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Juestel by replacing the LED (3) with a plurality of LED elements disposed in a predetermined arrangement, as taught by Roberts; at least to produce light of any color desired (col 30 ln 12-20).

15. Regarding claim 6, Juestel differs from the claimed invention only in not disclosing “a plurality of LED elements with different emission wavelengths disposed in a predetermined arrangement.” Roberts teaches (Fig 19) this limitation (col 29 ln 64-65, col 30 ln 12-14). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Juestel by replacing the LED (3) with a plurality of LED elements with different emission wavelengths disposed in a predetermined arrangement, as taught by Roberts; at least to produce light of any color desired (col 30 ln 12-20).

16. Claims 7 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Juestel in view of Roberts.

17. Examiner notes that Juestel is silent as to how contact to the light emitting apparatus is made. Roberts discloses (Fig 19) a light emitting apparatus including connection leads (1901-1904). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to form the structure

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(203, 204, 1901-1904) of Roberts below (flat portion of Drawing 1) and connected to the device of Juestel; for at least the purpose of allowing electrical connection to the apparatus of Juestel.

18. Regarding claim 7, Juestel discloses the structure of claim 1, therefore inherently disclosing the steps of:

preparing a light-transmitting portion (6) that includes a recess (at 2) to house the semiconductor light emitting element (3), the light-transmitting portion being of a light-transmitting material ([0024] In 1-3) and the recess being formed by molding [shaping] the light-transmitting material, the recess being provided with a phosphor layer (4; [0024] In 5) that is thinly formed along the surface of the recess;

19. Further regarding claim 7, the combined device of Juestel and Roberts discloses (Roberts: Fig 19b; col 25-26):

forming an electrode (1902) of metal material (col 25 In 6-11);

mounting (col 26 In 17-19) the semiconductor light emitting element on the electrode;

positioning the light-transmitting portion to the electrode (col 26 In 17-19); and

bonding the light-transmitting portion onto the electrode (col 26 In 21-29) such that the phosphor layer of the recess surrounds the semiconductor light emitting element (Juestel: Drawing 1).

20. Regarding claim 9, the combined device of Juestel and Roberts discloses (Roberts Fig 19b) the electrode is a lead electrode (1902; col 30 In 6-7) provided on

(interpreted as indirectly on through intermediate surface 203) the surface of a submount member (204) of high thermal conductivity (col 10 ln 47, 54).

21. Regarding claim 10, the combined device of Juestel and Roberts discloses (Roberts Fig 19b) the electrode is a copper-foil electrode (col 12 ln 28-29, 41-42, foil broadly interpreted to include 1902) provided through an insulation layer (203; col 9 ln 6, encapsulant inherently is an insulator or device would be shorted and not function) on the [side] surface of a base member (204) of high thermal conductivity (col 10 ln 47, 54).

22. Regarding claim 11, the combined device of Juestel and Roberts differs from the claimed invention only in not expressly disclosing "a flip-chip type LED." Roberts teaches the use of a flip-chip type LED (col 20 ln 15-37) and discloses the semiconductor light emitting element is flip-chip bonded onto the electrode (col 20 ln 24-29). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to make the LED of the combined device of Juestel and Roberts a flip-chip type LED, as taught by Roberts; at least to extend operation (Roberts col 20 ln 33-37).

23. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Juestel in view of Roberts as applied to claim 7 above, and further in view of Mueller et al. (US 6,417,019) – hereinafter Mueller.

24. Regarding claim 8, the combined device of Juestel and Roberts discloses the phosphor layer is formed on the surface of the recess formed by molding (Juestel: 4; [0024] ln 5). The combined device of Juestel and Roberts differs from the claimed



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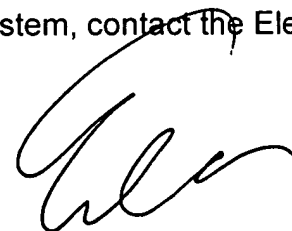
invention only in not expressly disclosing "spraying a phosphor material on the surface of the recess after forming the recess." Mueller teaches spraying a phosphor material (col 7 ln 19-20). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to spray the phosphor material, as taught by Mueller, on the surface of the recess of Juestel after forming the recess; at least to utilize a known phosphor layer deposition method (Mueller: col 7 ln 19-20).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew O. Arena whose telephone number is (571) 272-5976. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (571) 272-1732. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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